LETTER

Risk stratification in pulmonary embolism: an algorithmic tool approach

It is with much interest we read the article by Jiménez et al and the accompanying editorial. Focusing investigation on patients with symptomatic pulmonary thromboembolism (PTE) but who are normotensive at presentation, it reminds us that work still needs to be undertaken for the 95% of patients (including the 15% with submassive disease) who remain haemodynamically stable and excluded from thrombolysis, if current guidelines are followed. Anecdotally, with the increased use of CT pulmonary angiography, clinicians more readily visualise thrombus burden and, despite the lack of scientific evidence, consider thrombolytic therapy ahead of heparin even with submassive PTE. Although the mortality benefits from thrombolysis in this group are debatable, it does help improve the right ventricular function more rapidly than anticoagulation alone, reducing complications of chronic thromboembolic pulmonary hypertension. The paper by Jiménez recognises and evaluates the prognostic tools currently being used in risk analysis, reminding us that the use of a two-test strategy has a higher specificity and positive predictive value of pulmonary embolism-related death than any single test itself, whether using cardiac biomarkers such as troponin (cTnT), cardiac ECHO or lower extremity complete compression ultrasound. Importantly, it also clarifies that although there is a trend to better evaluation with all three tests used together, the difference comparing a two-test approach with a three-test approach is not statistically significant. In an attempt to identify patients who can be appropriately managed in a semi-outpatient (after day 2) ambulatory manner and, at the other extreme, patients for active thrombolysis, we have used the enclosed protocol (figure 1) where individual components are based on published evidence but not necessarily guidelines. More specifically it incorporates the pulmonary embolism severity index (PESI) in the two-test approach and gives more confidence, particularly when thrombolysis becomes an option in those with high severity (class IV and V) scores. Using the initial troponin, as a sensitive but not specific triage tool addressing right heart strain, reduces the overuse of ECHO and adds to the value of the pathway as there will still be patients who can be discharged diagnosed with a small PTE and low PESI score (class I and II) and therefore low risk of mortality. The future may see further validated use of highly sensitive cardiac troponin (hsTnT) and CT assessment of the right heart, but it is likely that a two-test approach will be maintained in risk stratification.

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